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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,160	12/26/2001	Thomas James Edsall	ANDIP001	9388
22434	7590	12/13/2005		
BEYER WEAVER & THOMAS LLP P.O. BOX 70250 OAKLAND, CA 94612-0250			EXAMINER PHAM, BRENDA H	
			ART UNIT	PAPER NUMBER
			2664	

DATE MAILED: 12/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/034,160

Applicant(s)

EDSALL ET AL.

Examiner

Brenda Pham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 25 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-66 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-66 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Brenda A. Pham
12/05/05

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-66 are pending in this application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-10, 12-14, 16-20, 22-31,33-35, 37-42, 44-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clear et al (US 2002/0101868 A1) in view of Behzadi (US 6,728,220 B2).

Claims 1, 22, 44-46, 50, 55, 57, 60, 65, 66 Clear et al discloses a method implemented on a network device for use in a storage area network, the method comprising:

Receiving or generating a packet or frame compatible with a standard protocol employed in the storage area network; encapsulating the packet or frame with a virtual storage area network identifier and MPLS information; sending the encapsulated packet or frame {(figure 8 shows transmit packet to ingress node (130) and process packet w/ MPLS and VLAN information (132). Clear et al teach the source host 40 transmits a data packet to the ingress edge switching node 44 through a port on the first VLAN 42.

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The ingress edge switching node receives the packet and applied a VLAN encapsulation header preferably includes a VLAN ID of the first VLAN, namely VLAN ID of "1" [0032]}.

Although Clear et al does not suggest VLAN can be used as SAN, It is well known in the art that a "Storage Area Network" or SAN means any network, real or virtual, that has one of it primary functions to provide storage form one or more storage system to one or more computer system (see Tamura et al (US 6,728,848). Therefore, it would have been obvious to those having ordinary skill in the art at the time of the invention was made to implement the system of Clear et al using a VLAN as a "Storage Area network". For furthermore reference, Ishizaki also teach a storage devices using Virtual Area Network (VLAN).

Although Clear et al does not teach TTL value, this clear limitation is well known in the art, and is teach by Behzadi (see figure 4, 266). It is well known in the art MPLS data packet headers contains a Time-to-Live (TTL field). The TTL is a value representing the "life" of the packet, and this element of the shim is used to protect against forwarding loops. This TTL field is always set to a maximum value at the ingress node and is decremented at every node along its path in the network. When the value of the TTL field is decremented to "0" at a node, the corresponding data packet will be discarded by that node.

Therefore, it would have been obvious to those having ordinary skill in the art at the time of the invention was made to implement TTL value in MPLS shim header to provide a "looping packet detection" mechanism in network.

Claims 2, 23, 56, 61, Clear et al teach wherein the network device is a switch and wherein sending the encapsulated packet or frame comprises sending the encapsulated packet or frame over an inter-switch link in the storage area network (see figure 2).

Claims 3, 4, 5, 7, 24-26, 28, 51-53, 58, 63, Clear et al further teach wherein encapsulating comprises appending a header to the packet or frame to create a new packet or frame, wherein the header includes fields for the virtual storage area network identifier and information specifying at least one of the TTL value and the MPLS information {(see FIG. 5 and FIG. 6A, The egress FRL 64 preferably encapsulates the packet illustrated in FIG. 5 into an MPLS packet [0044]}.

Claims 6, 27, 52 as explained in the rejection statement of claim 1 (parent claim), Clear et al disclose all the claim limitation in parent claim. Although Clear et al does not teach calculating an error check value for the new packet or frame and including the error check value the new packet or frame, insert CRC value field in MPLS header is well known and is show in FIG. 6 of Behzadi. It is well known in the art a process used to check the integrity of a block of data. A CRC character is generated at the transmission end. Its value depends on the hexadecimal value of the number of ones in the data block. The transmitting device calculates the value and appends it to the data block. The receiving end makes a similar calculation and compares its results with the added character. If there is a different, the recipient requests retransmission. CRC is a

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common method of establishing that data was correctly received in data communications.

Hence, it would have been obvious to those having ordinary skill in the art to implement packet header including CRC field.

Claims 8-10, 13, 29-31, 34, 48, 54, 59, 62, 64, Clear et al teach wherein the header further comprises a field specifying a type of traffic to be carried by the packet or frame, and wherein the available types includes at least one of Ethernet, fibre channel, and Infiniband {(The ingress FRL identifies the MPLS packet by its Ethertype (Etype) protocol identification [0040], see FIG. 6A}.

Claims 12, 14, 33, 35, 47, 49, as explained in the rejection statement of claim 1 (parent claim), Clear et al disclose all the claim limitation in parent claim. Although Clear et al does not teach wherein the standard protocol is fibre channel or Infiniband, it is well known in the art to implement Fibre Channel or Infiniband standard protocol in MPLS switching network.

Claims 16 and 37, Behzadi further teaches wherein the header includes a TTL field and the field has 8 bits reserved (see column 2, lines 35-39).

Claims 17-20 and 38-42, Behzadi further teach wherein the new packet or frame includes one or more MPLS labels, each of the labels including an indicator to indicate

whether the label is the last label in a label stack; wherein the indicator field one bit. {As shows in FIG. 2, the MPLS label field carries the label value that is used to forward a packet to the next LSR. The stacking field is used to identifying when an MPLS header is the last MPLS header in a stack of MPLS headers, and the TTL field carries a TTL value that places a limit on the number of hops an MPLS packet can traverse within an MPLS domain.

4. Claim 11, 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clear et al (US 2002/0101868 A1) in view of Behzadi (US 6,728,220 B2) further in view of Wakayama et al (US 2001/0049739 A1).

Claim 11, 32, as explained in the rejection statement of claim 1 (parent claim), Clear et al in view of Behzadi disclose all the claim limitation in parent claim. Although Clear et al in view of Behzadi does not teach wherein the header comprises a field specifying a user priority for the packet or frame, this limitation is well known in VLAN and MPSSL network environment and is teach by Wakayama et al according to ([0024] and FIG. 2, element 514-1).

Therefore, it would have been obvious to implement MPLS header to include a field specifying a user priority for the packet or frame.

5. Claim 15, 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clear et al (US 2002/0101868 A1) in view of Behzadi (US 6,728,220 B2) further in view of Walrand et al (US 6,674,760 B1).

Claims 15, 36, Clear et al in view of Behzadi discloses a method as set forth in claim 1 (parent claim), Clear et al in view of Behzadi does not teach wherein the header field for the virtual storage area network identifier has 12 bits reserved.

Walrand et al, in the same field of endeavor, teach the VLAN tag includes a 12-bit VLAN-ID used to identify the VLAN to which the packet is directed (see [0005]).

Therefore, it would have been obvious to implement a 12-bit VLAN-ID in the VLAN header.

6. Claims 21, 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clear et al (US 2002/0101868 A1) in view of Behzadi (US 6,728,220 B2) further in view of Aggarwal et al (US 6,330,614 B1).

Claim 21, 43, Clear et al in view of Behzadi discloses all the claim limitation recited in claim 1 (parent claim). Neither Clear nor Behzadi teach wherein the header further includes a version field indicating a version of the header. The limitation is well known in the art and is teach by Aggarwal et al in according to figure 7.

It would have been obvious to those having ordinary skill in the art to implement the version field indicating a version of the header, such as that teach by Aggarwal et al.

Response to Arguments

7. Applicant argued in REMARKS that, "With respect to independent claim 1, the claims recites "encapsulating the packet or frame with a virtual storage area network identifier and information specifying at least one of a TTL value and MPLS information".

Applicant asserted that Clear et al (US 2002/0101864) relates to a VLAN, not a VSAN. Thus, the tunneling protocol disclosed in Clear relates to a VLAN identifier rather than a VSAN identifier.”

Examiner respectfully disagrees. A “Storage Area Network” or SAN is well known in the art and is means any network, real or virtual, that has one of its primary functions to provide storage from one or more storage systems to one or more computer systems as is defined by Tamura et al (US 6,728,848).

Ishizaki (US 2003/0101239 A1) also teach a storage devices using Virtual Local Area Network. Therefore, the VLAN in Clear et al is used as a “Storage Area network” SAN in recited in the claims.

Applicants further argue that, “Behzadi relates solely to preventing transmission loops in a ring network that utilizes label switching. Behzadi fails to disclose or suggest preventing transmission loops in a network that is not a network that is not a ring network using a TTL field. “

Many prior art, such as Tappan (US 6,295,296 B1) or Chuah et al (US 6,408,001 B1) or Boodaghians (US 6,920,133 B1), teach a well known TTL field using in a label switching network other than a ring network. Tappan teaches a MPLS shim header contents of a TTL (“Time to Live”) field, which decrements this field before forwarding the packet. If the value reaches zero, the router discards the packet without forwarding it. Chuah et al also teach Time to Live (TTL) field can be used to delineate the maximum numbers of hops a packet is allowed in the network while being transported.

Therefore, TTL field of the header of a label switching network is used to avoid an infinite loop when the packet is being transmitted through a network. When the value in the TTL field drops to zero, the packet will be dropped from transmission in the network.

Examiner believes Clear et al and Behzadi disclose and render obvious all the claim limitations. Therefore, claims 1-66 remain rejected.

Conclusion

8. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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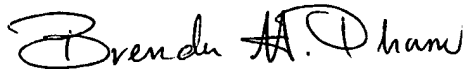
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brenda Pham whose telephone number is (571) 272-3135. The examiner can normally be reached on Monday-Friday from 9:00 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin, can be reached on (571) 272-3134.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-2600.

December 5, 2005

Brenda Pham

A handwritten signature in black ink that reads "Brenda A. Pham". The signature is written in a cursive style, with the first letters of the first and last names being capitalized and prominent.